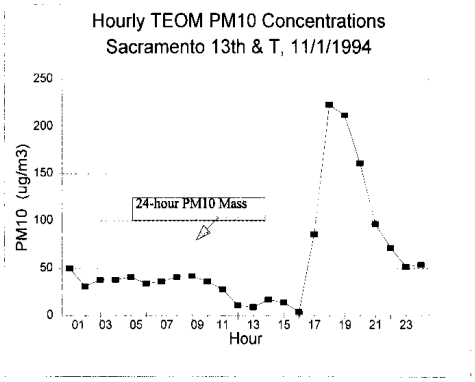
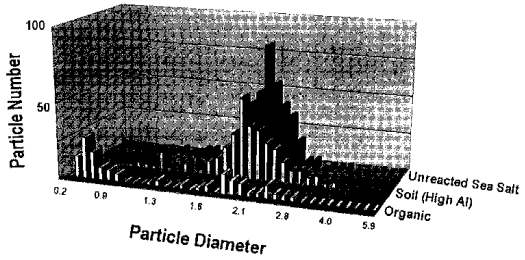
Monitoring Needs--Health

- What are ***People*** Exposed to? Specific needs--
  - Physical parameters--mass, size, **number**
  - Time resolution--hourly or continuous
  - Size resolution--**0.1, 1**, 2.5, 10 micron
  - Chemical speciation--NO3, SO4, NH4, **H+**, C's
  - Locational resolution-- home, neighborhood, people
  - Methods equivalence--**proven among methods**
  - Continuous surrogate monitors--calibrated to mass
  - Duration-- **Prolonged (no drop out periods)**



High PM10, Low Ozone
0800-0830 8/22/97



Health

- Data to link population-based monitoring to people
  - real people not exposed to monitor average, highs or lows
- **FRM not very exciting**
- Why needed?
  - Needed to support "powerful" studies
  - Health studies of future--people, not population based
    - mechanisms, sensitive people, dose/response, components

Health

- Examples of heath studies--monitoring limits
  - Children's Health Study
  - Central Valley Kaiser Study
  - South Coast Kaiser Study
  - Upcoming Sacramento study
    - In each case existing monitoring not useful
    - In each case special monitoring needed--costly!
    - In each case technology limits power of study

Indoor/Personal

- Personal and Indoor monitoring

  Again, what are people exposed to?
  - Compliance monitors don't predict personal
  - Id sources of PM exposure
- Improved (accepted) particle samplers
  - light, accurate, quiet, dependable, time resolved
  - Current monitoring methods not suitable
  - Personal PM sampler problems
  - (where are the "personal" lasers, mass specs., single particle counters?)

Atmospheric Chemistry/Processes

- Gas to particle conversions data
  - methods to measure precursors + intermediates
- Refine and apply optical monitoring
  - link to chemical composition
  - to evaluate visibility and sources of haze in Class I, urban and rural sites
  - to track chemical + physical change of particles

Atmospheric Chemistry/Processes

- Monitors for nitrates and other volatiles
- Application of single particle analyzers-simplify
  - provides time resolution to chemical data